atmosphere, wherein said sample comprises a semiconductor substrate and overlying said semiconductor substrate a layer which is subjected to the etching of step (i), said layer being a laminate of at least two films overlying the semiconductor substrate, the at least two films comprising different metals of different ionization tendencies, said etching including etching of each of the at least two films, residual corrosive compounds being left on the sample after said etching;

(ii) after step (i), treating the sample by means of a second plasma to remove said residual corrosive compounds formed in step (i) and to remove a resist mask, said second plasma being formed in an oxygen gas atmosphere which is different from the gas atmosphere in which the first plasma is formed, the treating by means of the second plasma being performed in a location which is different from a space where the etching is performed, and wherein a sample is capable of being transferred from said space to said location through an atmosphere having a pressure reduced from atmospheric pressure;

(iii) contacting a surface of said sample etched in step (i) and treated in step (ii) with at least one liquid; and

(iv) after step (iii), drying the sample.

B1

6. (Amended) A method of processing a semiconductor sample,

B2

comprising the steps of:

(i) etching the sample, comprising a laminate of at least two films overlying a semiconductor substrate, the at least two films comprising different metals of different ionization tendencies, through a resist mask formed on said sample, by means of a first plasma formed in a gas atmosphere, said etching including etching of the at least two films, residual corrosive compounds from the etching being left on the sample after etching;

(ii) after step (i), transferring the sample to a location for a second plasma, and then treating the sample by means of the second plasma to remove said residual corrosive compounds formed in step (i) and to remove said resist mask, said second plasma being formed in an oxygen gas atmosphere which is different from the gas atmosphere in which the first plasma is formed, wherein step (i), and the transferring and treating of step (ii), are performed in a vacuum, wherein said location for the second plasma is different from a space where the etching is performed, and wherein said location is capable of being in communication with said space through an atmosphere having a pressure reduced from atmospheric pressure; and

(iii) contacting a surface of said sample etched in step (i) and treated in step (ii) with at least one liquid, said contacting being performed after said treating the sample by means of the second plasma so as to avoid corrosion of

the sample due to said residual corrosive compounds remaining on the sample after said step (ii).

8. (Amended) A method of processing a semiconductor sample having a laminate comprising at least two films of at least two different metals of different ionization tendencies overlying a semiconductor substrate, comprising the steps of:

(i) etching said semiconductor sample, including said at least two films, using a resist mask, by means of a first plasma formed in a first gas with first processing conditions, residual corrosive compounds being left on the sample after the etching,

(ii) after step (i), ashing the sample by means of a second plasma to remove at least the resist mask and said residual corrosive compounds formed in step (i), said second plasma being formed in a second gas and with second processing conditions, said ashing being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure,

(iii) contacting a surface of said sample etched in step (i) and ashed in step (ii) with at least one liquid which effects at least one of (a) removal of

said residual corrosive compounds formed in step (i) which were not removed in step (ii) and (b) passivation of said surface etched in step (i) and ashed in step (ii), and

B3

(iv) after step (iii), drying the sample.

18. (Amended) A method of processing a semiconductor sample having a laminate, said laminate comprising at least two films having at least two different metals of different ionization tendencies, overlying a semiconductor substrate, comprising the steps of:

(i) etching said semiconductor sample having the laminate comprising at least two films of at least two different metals of different ionization tendencies, wherein said at least two metals are selected from the group consisting of Al, Cu, and refractory metals, alloys of at least one of Al, Cu, and refractory metals, alloys of at least one of Al, Cu and refractory metals and also containing silicon, silicides of refractory metals, TiN and TiW, by using a resist mask, by means of a first plasma formed in a first gas with first processing conditions, each of the at least two films of the laminate being etched during said etching, residual corrosive compounds being left on the sample after said etching,

B4

(ii) after step (i), ashing the semiconductor sample by means of a

second plasma to remove at least the resist mask and said residual corrosive compounds formed in step (i), said second plasma being formed in a second gas and with second processing conditions, said ashing being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure,

B4

(iii) contacting a surface of said sample etched in step (i) and ashed in step (ii) with at least one liquid which effects at least one of (a) removal of said residual corrosive compounds formed in step (i) which were not removed in step (ii) and (b) passivation of said surface etched in step (i) and ashed in step (ii), and

(iv) after step (iii), drying the sample.

26. (Amended) A method of processing a semiconductor sample having a laminate of at least two layers overlying a semiconductor substrate and a resist mask formed on said laminate, said at least two layers respectively being made of different materials from each other and having different ionization tendencies from each other, comprising the steps of:

B5

(i) etching each of said at least two layers of said laminate through said resist mask, by means of a first plasma, so as to form an etched sample having an

etched shape which corresponds to a pattern of said resist mask, residual corrosive compounds from the etching being left on the etched sample;

(ii) after step (i), treating the etched sample by means of a second plasma, to remove said residual corrosive compounds formed in step (i) and to remove said resist mask, said treating being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure; and

(iii) contacting a surface of said semiconductor sample etched in step (i) and treated in step (ii) with at least one liquid to remove said residual corrosive compounds which were not removed in step (ii).

27. (Amended) A method of processing a semiconductor sample having a laminate of at least two layers overlying a semiconductor substrate and a resist mask formed on said laminate, said at least two layers respectively being made of different materials from each other and having different ionization tendencies from each other, comprising the steps of:

(i) etching each of said at least two layers of said laminate through said resist mask, by means of a first plasma, so as to form an etched sample having an

etched shape which corresponds to a pattern of said resist mask, residual corrosive compounds from the etching being left on the etched sample;

(ii) after step (i), treating the etched sample by means of a second plasma, to remove said residual corrosive compounds formed in step (i) and to remove said resist mask, said treating being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure;

(iii) contacting a surface of said semiconductor sample etched in step (i) and treated in step (ii) with at least one liquid, to remove said residual corrosive compounds which were not removed in step (ii); and

(iv) after step (iii), drying the semiconductor sample.

28. (Amended) A method of processing a sample having a laminate of at least two layers on a substrate and a resist mask formed on said laminate, said laminates including at least a first layer and a second layer, the first layer being made of a material selected from the group consisting of TiW, TiN and W, and the second layer being made of an Al alloy, comprising the steps of:

(i) etching each of said first layer and said second layer through said resist mask, by a first plasma formed in a first vacuum chamber, so as to form an

etched sample having an etched shape which corresponds to a pattern of said resist mask, residual corrosive compounds from the etching being left on the etched sample;

(ii) after step (i), treating the etched sample by a second plasma formed in a second vacuum chamber, to remove said residual corrosive compounds formed in step (i) and to remove said resist mask, said treating being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure; and

(iii) contacting a surface of said sample etched in step (i) and treated in step (ii) with at least one liquid, to remove said residual corrosive compounds which were not removed in step (ii).

29. (Amended) A method of processing a sample having a laminate of at least two layers on a substrate and a resist mask formed on said laminate, said laminate including at least a first layer and a second layer, the first layer being made of a material selected from the group consisting of TiW, TiN and W, and the second layer being made of an Al alloy, comprising the steps of:

(i) etching each of said first layer and said second layer through said

resist mask, by a first plasma formed in a first vacuum chamber, so as to form an etched sample having an etched shape which corresponds to a pattern of said resist mask, residual corrosive compounds from the etching being left on the etched sample;

(ii) after step (i), treating the etched sample by a second plasma formed in a second vacuum chamber, to remove said residual corrosive compounds formed in step (i) and to remove said resist mask, said treating being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure;

(iii) contacting a surface of said sample etched in step (i) and treated in step (ii) with at least one liquid, to remove said residual corrosive compounds which were not removed in step (ii); and

(iv) after step (iii), drying said sample.

30. (Amended) A method of processing a sample that includes a laminated member having a laminate of at least two films overlying a substrate, the at least two films comprising different metals of different ionization tendencies in different films of the at least two films, comprising the steps of:

(i) etching the sample through a resist mask formed on said laminated member in a first processing chamber by means of a first gas plasma so as to etch each of the at least two films comprising different metals of different ionization tendencies, residual corrosive compounds being left on the sample after said etching;

(ii) treating the sample in a second processing chamber by means of a second gas plasma, to remove said resist mask and said residual corrosive compounds which are adhered to a side wall of said laminate, including the different metals of different ionization tendencies, formed in said step (i) , said treating being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure; and

(iii) contacting a surface of the sample exposed by said step (i) and treated in said step (ii) with at least one liquid, to remove a remainder of said residual corrosive compounds which were adhered to said side wall of said laminate and were not removed in said step (ii).

37. A method of processing a sample, comprising the steps of:

(i) etching a sample, having a laminated member including a laminate of an Al alloy film and a high melting point metal film overlying a substrate, through a resist mask, using a gas plasma for said etching, said etching including etching said Al alloy film and said high melting point metal film of the laminated member, residual corrosive compounds being left on the sample after said etching;

(ii) after said step (i), treating the etched sample by means of a post-treatment gas plasma different from said gas plasma for etching in said step (i), to remove said resist mask and said residual corrosive compounds which are adhered to a side wall of said laminated member , said treating being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure;

(iii) rinsing the sample treated in said step (ii), to remove said residual corrosive compounds which were adhered to said side wall of said laminated member and were not removed in said step (ii); and

(iv) drying the sample rinsed in said step (iii).

43. (Amended) A method of processing a sample having laminated layers on a substrate and a resist mask formed on said laminated layers, said laminated layers respectively being formed of different metals, said different metals respectively being (1) TiW, TiN or W and (2) an Al alloy, comprising the steps of:

(i) etching said sample through said resist mask, by a first plasma formed in a first vacuum chamber, said etching including etching of each of said laminated layers, residual corrosive materials being left on the sample after the etching;

(ii) after step (i), treating the sample by a second plasma in a second vacuum chamber, to remove said residual corrosive compounds formed in step (i) and to remove said resist mask , said treating being carried out at a second location different from a first location where said etching is carried out, said first and second locations being capable of being in communication with each other through an atmosphere having a pressure reduced from atmospheric pressure;

(iii) contacting a surface of said sample etched in step (i) and treated in step (ii) with at least one liquid, to remove a remainder of said residual corrosive compounds which were not removed in step (ii); and

(iv) after step (iii) drying said sample.

Please add the following new claims to the application:

44. A method according to claim 1, wherein said pressure reduced from atmospheric pressure is a vacuum.

45. A method according to claim 1, wherein said location for the second plasma is cut off from a space where the etching is performed, during treatment by the second plasma, and wherein at times other than during treatment by the second plasma said location is in communication with said space through the atmosphere having a pressure reduced from atmospheric pressure.

46. A method according to claim 6, wherein said pressure reduced from atmospheric pressure is a vacuum.

47. A method according to claim 6, wherein said location for the second plasma is cut off from said space during the treatment by the second plasma, and wherein at times other than during the treatment by the second plasma said location is in communication with said space through said atmosphere.

48. A method according to claim 8, wherein said pressure reduced from atmospheric pressure is a vacuum.

49. A method according to claim 8, wherein said second location is cut off from said first location when the ashing is performed, and, at times other than when said ashing is performed, said second location is in communication with said first location through said atmosphere.

50. A method according to claim 18, wherein said pressure reduced from atmospheric pressure is a vacuum.

51. A method according to claim 18, wherein said second location is cut off from said first location when the ashing is performed, and, at times other than when said ashing is performed, said second location is in communication with said first location through said atmosphere.

52. A method according to claim 26, wherein said pressure reduced from atmospheric pressure is a vacuum.

53. A method according to claim 26, wherein said second location is cut off from said first location when the treating is performed, and, at times other than when said treating is performed, said second location is in communication with said first location through said atmosphere.

54. A method according to claim 27, wherein said pressure reduced from atmospheric pressure is a vacuum.

55. A method according to claim 27, wherein said second location is cut off from said first location when the treating is performed, and, at times other than when said treating is performed, said second location is in communication with said first location through said atmosphere.

56. A method according to claim 28, wherein said pressure reduced from atmospheric pressure is a vacuum.

57. A method according to claim 28, wherein said second location is cut off from said first location when the treating is performed, and, at times other than when said treating is performed, said second location is in communication with said first location through said atmosphere.

58. A method according to claim 29, wherein said pressure reduced from atmospheric pressure is a vacuum.

59. A method according to claim 29, wherein said second location is cut off from said first location when the treating is performed, and, at times other than when said treating is performed, said second location is in communication with said first location through said atmosphere.

60. A method of processing a sample according to claim 30, wherein said pressure reduced from atmospheric pressure is a vacuum.

61. A method of processing a sample according to claim 30, wherein said second location is cut off from said first location when the treating is performed, and, at times other than when said treating is performed, said second location is in communication with said first location through said atmosphere.

62. A method of processing a sample according to claim 37, wherein said pressure reduced from atmospheric pressure is a vacuum.

63. A method of processing a sample according to claim 37, wherein said second location is cut off from said first location when the treating is performed, and, at times other than when said treating is performed, said second location is in communication with said first location through said atmosphere.

B8

64. A method of processing a sample according to claim 43, wherein said pressure reduced from atmospheric pressure is a vacuum.

65. A method of processing a sample according to claim 43, wherein said second location is cut off from said first location when the treating is performed, and, at times other than when said treating is performed, said second location is in communication with said first location through said atmosphere.--